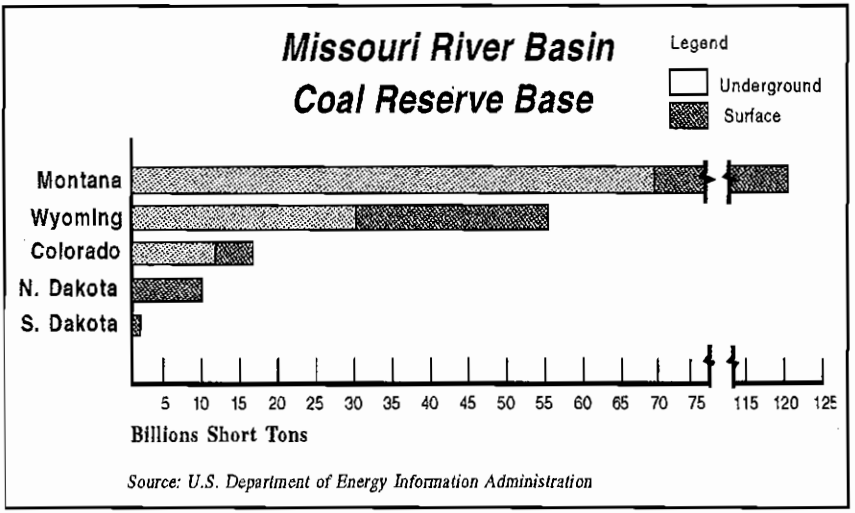
VIII.
Management Challenges

Those dealing with Missouri River water-management issues in the 1990s were confounded by the ambiguity of the Pick-Sloan plan. While the legislative intent is clear with respect to certain development and operations objectives, some other purposes are difficult to discern. The Flood Control Act of 1944 and the Rivers and Harbors Act of 1945 were in fact generic bills for the entire nation. The Missouri River basin provisos had been integrated into the legislation.

Understanding the legislative intent of Pick-Sloan is complicated in part because the language of the law is not contained just in the statute, but also in the adopted documents. And in the years since the 1944 Flood Control Act, other legislation has been enacted that applies to the basin's water and related land resources. The complexity of discerning legislative intent is further compounded by new issues that were not addressed adequately in the original legislative history.

In the decade previous to the drought that began in 1987, the major policy issue related to the main-stem system centered on "surplus water." The drafters of the Pick-Sloan legislation virtually ignored the term and left its definition to the Corps. Under section 6 of the 1944 act, the Secretary of the Army is authorized to enter into contracts for surplus water with states, municipalities, and individuals.[1] The Corps defines surplus water as (1) that stored in a reservoir that is not required because the authorized need for the water never developed or the need is reduced by changes that occurred since authorization or construction or (2) water that would be used more beneficially as municipal and industrial water than for the authorized purpose and that, when withdrawn, would not significantly affect authorized purposes over some specified time period.[2]

In the 1970s, considerable controversy was generated in the Missouri basin over the possible uses of available water supplies for energy developments. The upper basin states contain over one-half of the total coal reserves in the United States. The Missouri Basin Inter-Agency Committee noted in 1969 that these reserves represented "a massive raw material base for the potential production of . . . synthetic liquid and gaseous fuels, and coal chemicals."[3] Following the Arab oil embargo of 1973-1974, many reports were circulated on proposed energy developments in the upper basin that if implemented would greatly increase



demands for water.

As in the past, a "boomer" psychology motivated upper basin interests to work toward capturing the profits from developments designed to exploit the region's natural resources. In the period following the basin states' failure to legislate a water compact, interest in main-stem water resources had languished. The "energy crisis" stimulated the basin's governors to examine unresolved policy issues.

As competition for use of available water supplies increased, so did questions and arguments about jurisdictional control. In December 1973, the Departments of Interior and Army asked the Missouri River Basin Commission to examine issues related to marketing water from the main-stem reservoirs.[4] The MRBC formed an ad hoc steering committee with both state and federal subcommittees, along with supporting technical subcommittees to respond to the request. The commission was to report by February 1974.

The federal subcommittee sought to determine how much water was available at what cost for municipal and industrial marketing, and who should sell it under what authority. It determined that up to 3 million acre-feet of water annually was available and should be marketed at a unit price of between $10 and $25 per acre-foot.[5] Authority for the Corps to sell municipal and industrial water was based on section 6 of the 1944 Flood Control Act or on Title III of the Water Supply Act of 1958.[6]

The state subcommittee concluded that the federal government did not have title to and control of all water stored in the main-stem reservoirs. The lower basin states challenged the authority of either Interior or

Army to change the original purposes that ensured that a designated amount of water was to be stored in a federal reservoir. They stipulated that congressional action was required in accordance with the 1958 Water Supply Act. Upper basin states were more amenable to contracting with federal agencies for resale of water.[7]

The MRBC state subcommittee concluded that the issue of water marketing needed thorough study by the basin commission. It recommended that in the interim, individual states should cooperate with the federal agencies to facilitate energy development proposals. Cooperation ought, however, to be constrained by certain "principles" that enunciated the primacy of state water law and by the right of the states to set the price and market the water.

The MRBC steering committee could only report on the dichotomous positions of its federal and state subcommittees. In July 1974, it reported that the states and federal agencies recognized that each had certain rights to the flow of water into and out of the main-stem reservoirs. These rights were not defined or quantified, and no agreements were reached concerning water to be withdrawn from open reaches between or below the main-stem reservoirs. Specific authorization for marketing water could not be agreed on, but the committee determined that ultimately up to 3 million acrefeet of water stored and not used for irrigation purposes in the main-stem reservoirs could be made available for industrial use.[8]

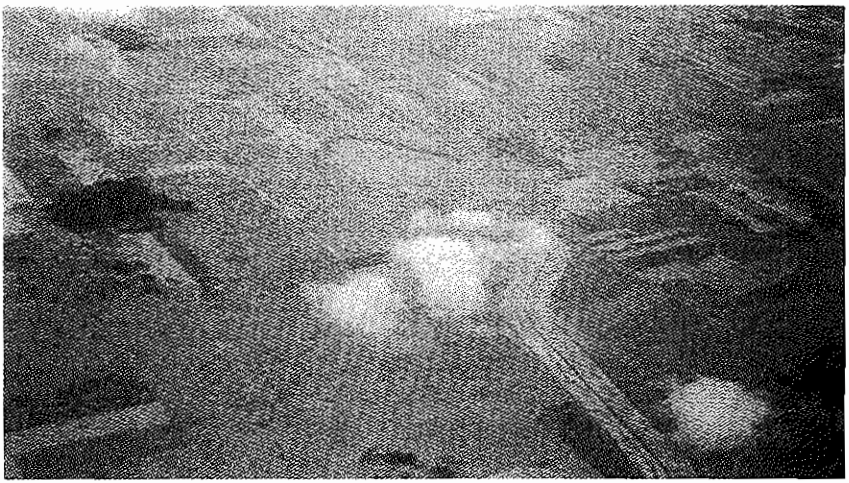
The Departments of the Interior and the Army attempted to resolve the thorny questions. In a memorandum dated 27 November 1974, the Interior Department Solicitor took the position that section 9(c) of the Reclamation Project Act of 4 August 1939 gave Interior the "express authority to market water for municipal and industrial uses."[9] A month later, the Army General Counsel conceded that, based on Interior's function and jurisdictions within the Missouri basin multiple-purpose program and its role in project cost allocation, joint marketing would be acceptable. The Office of Counsel advised the Army to seek "legislation establishing a systematic marketing system."[10]

In their mutual desire to proceed more rapidly than the legislative process allowed, the two federal agencies formalized their agreement on the water marketing issue in a Memorandum of Understanding (MOU).[11] Dated 24 February 1975, the MOU had a term of two years. It was intended to deal expeditiously with the nation's energy crisis pending a more permanent resolution of the questions concerning surplus water in the main-stem reservoirs.

The basin states were dissatisfied with the MOU and attempted unsuccessfully to attach their subcommittee principles to the document.

They questioned its legality and sought a negotiated compromise. The coalition of upper basin states won some concessions when the Bureau of Reclamation agreed to observe the principles as a "gentlemen's agreement" and attempted to legitimize its actions by preparing a programmatic environmental impact statement (EIS) on the MOU.[12]

These concessions allowed states to control pricing and selling of water that was intended originally for federal irrigation projects. If the Bureau of Reclamation's projects had materialized as planned, Congress would have authorized and appropriated money for construction of the irrigation outlets from main-stem reservoirs. Upon project completion, the federal water rights that the bureau routinely filed with the states would have been transferred to irrigation districts through the state permit system. The beneficiaries would have been charged a fee for water service and would have received preference rights for power through the bureau. If all this had materialized, the upper basin and western area states water codes would have been observed.



Incomplete Garrison Diversion Irrigation Project.

The planned projects and scenario of events lobbied for and legislated in the Flood Control Act of 1944 did not materialize. The failed scheme for "a new frontier in irrigation history" further undermined the fragile network of basin interests that had coalesced and endured through the completion of the main-stem projects. After realizing that the stored water had a commodity value, the upper basin states wanted to establish primacy over its control.

North Dakota State Water Commission chief engineer Vernon Fahy saw the federal water marketing agreement as a betrayal of the states. He

said it was "ironic" that after having "contributed so great a cost" to Pick-Sloan in order to serve basin needs, the states were told that the federal government had "assumed ownership of stored waters." Fahy wanted any decision on control over the water impounded in main-stem reservoirs to be made through the MRBC, which represented the basin states.[13]

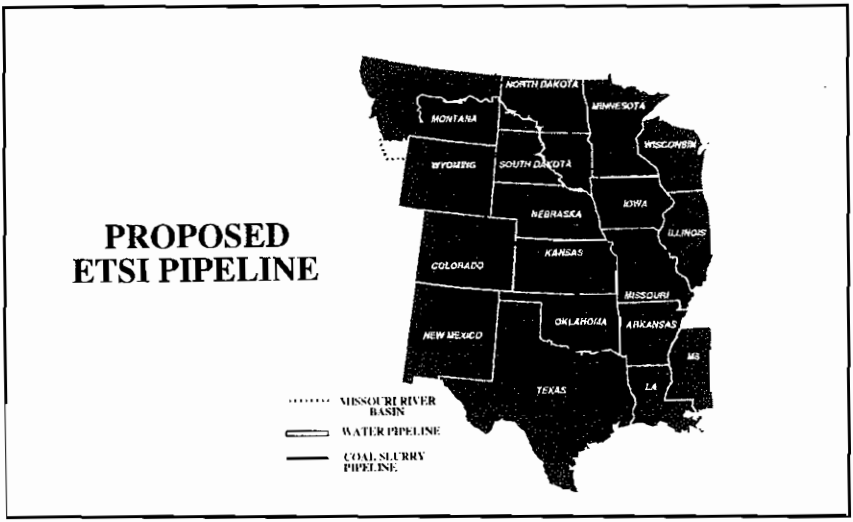
The basin states revisited the water marketing issues in 1977, and they were just as adamant in their positions. Fahy said it was still his opinion that North Dakota and the United States, "as separate and independent sovereigns" had "certain separate and independent powers over the Missouri River." He argued that the state could appropriate water under its own sovereign authority. Fahy held that the federal government "could not authorize industry to appropriate water" from the river.[14]

A number of states again raised questions concerning water rights. They specifically objected to recognition of Indian water rights as opposed to "other valid water rights." Although the amount of water "reserved" to Indian tribes to complement reservation lands was not quantified in 1992, it was well established that tribes have legal claim to Missouri River water that dates from the time the reservations were established, thus granting Indians senior water rights over later water claims. Some states wanted assurances that applicable state laws and water rights would be observed.

The state of Kansas issued an especially strong statement against federal water marketing from Pick-Sloan projects. The state contended that "an arbitrary agreement" between the department secretaries for a block of storage constituted a modification of the purposes of Pick-Sloan and would involve major operational changes. The water marketing agreement was "a flagrant violation of congressional authority and an erosion of the legislative process."[15]

Major General J.W. Morris, director of civil works for the Corps, held that the law clearly defined the purpose for which main-stem water could be used and who controlled it. Through the 1944 Flood Control Act, Congress assigned the agencies' authority according to purpose and control; it did not appropriate water. General Morris said responsibility for distribution of any water surplus to specified purposes rested with the Secretary of the Army.[16] North Dakota Senator Milton R. Young responded that Morris's statement showed that the Corps of Engineers claimed "more authority" than Young thought the federal agency had.[17]

The surplus water issue lay dormant until September 1981, when Energy Transportation Systems, Inc. (ETSI) revealed its intent to contract with South Dakota to buy 50,000 acre-feet of water or about 16.3 billion gallons a year for 50 years from the federal Oahe Reservoir



located in the state.[18] ETSI had filed an option contract with the Corps of Engineers as early as 1973 to use water to flush pulverized coal in a slurry line from the Powder River basin in Wyoming to power plants in Oklahoma, Arkansas, and Louisiana. As originally planned, the line's venture group would use water drawn from the Madison Formation, a huge aquifer beneath eastern Wyoming, southwestern South Dakota, and northwestern Nebraska. Wyoming's state engineer had issued the water permit in 1974, but the use involved an inter-basin transfer that was denied under Title I, section 3(d), of the Planning Act of 1965. The ETSI venture group did not reveal its change of plan to use Missouri River water and to contract with South Dakota until the day the period closed for comments on the proposed line's environmental impact statement related to the line proposed from Wyoming to the south-central states.[19]

On 17 September, South Dakota Governor William Janklow confirmed months of secret negotiations with the ETSI venture group. He called a special session of the legislature to consider the water rights contract and required permits. Although legislators complained that they should have had more time to consider Janklow's deliberations with ETSI, they approved pursuing consummation of the deal, which was projected to bring approximately $1.4 billion to the state over the next 50 years. The state received its first $2 million when it signed the contract with ETSI in February 1982.[20]

The ETSI contract was exceedingly attractive to many interests in the revenue-strapped state. The company's proposed aqueduct to Wyoming would provide up to 2.2 billion gallons of free water a year to water-

needy areas of western South Dakota. State revenue bonds would help finance the line, but ETSI payments, expected to amount to $9 million a year, were to go into a state water development fund that would be used for a wide range of water resources projects and studies.[21]

Despite its benefits, the water sale contract with a private company for out-of-basin use ignited conflict even within South Dakota. American Indians Against Desecration claimed the waterline would cross sacred Indian land. The Dakota American Indian Movement and Women of All Red Nations contested the right of the state to sell Missouri River water and expressed concern about the effect of such sales on Indian water rights. Indian activist Russell Means said the 1868 Fort Laramie Treaty gives Sioux Indians sole ownership of the Missouri River. South Dakota attorneys responded that Indians had the right to use as much water from the river as they needed, but could not bar the state from selling "surplus water."[22]

The Black Hills Alliance held that the water sale violated Indian rights and failed to guarantee South Dakota communities a share of the water. The group claimed ETSI had no legal right to condemn property along the waterline's route if landowners refused to grant easements. Others in water-scarce western South Dakota who depended on the Madison Formation expressed concern that ETSI might deplete that precious source, even with the Oahe water contract.

The chairman of the Standing Rock Sioux Tribe, Pat McLaughlin, filed an intervenors protest to the ETSI contract. The agreement established a precedent, he believed, "whereby commercial marketing of Missouri River water to private out-of-state users may in fact take precedence over instate agricultural uses." McLaughlin contended that the state's ETSI deal represented "a legal infringement upon the reserved water rights of the tribe," which had "only begun to develop the potential for irrigation of its suitable agri-lands" when industrial water was given precedence. He cited federal case law, the Fort Laramie Treaty of 1868, and Articles 6 and 14 of the Constitution to substantiate the position of the Standing Rock Sioux Tribe that the governor had acted with "continuous disregard for Indian rights and self-government."[23]

It was not the volume of water involved in the ETSI contract that constituted a threat, but rather the precedent set. The perception of Indian tribes and some interest groups that the ETSI deal represented the beginning of massive exploitation of Missouri River water was reinforced by ancillary developments. These included plans the Corps was studying to divert 75 times the amount of Missouri River water required for the ETSI pipeline. These proposals called for the transfer by canal of as much as

4.1 million acre-feet of water annually from either the Missouri River in Kansas or the Fort Randall Reservoir in South Dakota to supplement declining supplies in six western states that drew on the groundwater formation known as the Ogallala Aquifer. South Dakota interests also were planning water use projects, such as the Central South Dakota Water Supply System (CENDAK) proposal, which would transfer 488.7 billion gallons of Missouri River water each year to the James River basin in the eastern part of the state for domestic and irrigation use. Still another plan, called the WEB Rural Water Development Project, was reformulated in South Dakota in February 1982 to pipe water from the Missouri River to north-central counties.[24]

These plans to use Missouri River water reinforced the perception that the water remaining for other uses might be insufficient. In 1944, the communities downstream from the big dams had feared floodwaters. In 1982, they feared the river's flow would be reduced to a mere trickle, hampering the operation of riverside power plants and municipal water facilities; and harming navigation, recreation, and fish and wildlife habitats.

The conflict transcended questions concerning water supply and demand. Other issues related to state-versus-state and state-versus-federal control of valuable resources, which the Pick-Sloan legislation had left unresolved. The upper basin states, especially, believed they were not receiving sufficient return on their investments in huge public-works projects in their states. They resented the lower basin states' receiving substantial benefits from their comparatively minimal contributions to the development program.[25]

Governor Janklow was most outspoken in expressing this position. In December 1981, he asserted: "I am not here to tell you we want more than our share of Missouri River water. We will never be able to use the amount of water to which we are entitled; I would say our total use of water doesn't equal that of Omaha, Nebraska, clearly not as much as Saint Louis." He pointed out that Omaha had built a new industrial park that would draw water from the river, and St. Louis and other Missouri cities took water from the river and moved it (even outside the basin) as it saw fit. Also, because of the big dams and reservoirs in his state, the downstream cities did not flood anymore. South Dakota, he said, paid for such benefits to the downstream areas and got virtually nothing in return.[26]

Janklow's "fair share" rhetoric drew critical responses from downstream interests. The Omaha World-Herald, an advocate and beneficiary of the big dams, editorialized that Janklow left "misleading impressions"

that threw "doubt on the credibility of [his] case."[27] The newspaper asserted that South Dakota, too, received substantial benefits from the upstream developments. Other downstream special interests denounced the governor's "sacrifice litany" and escalated the conflict.[28]

As the authorizing boards in South Dakota were issuing required state permits, the Missouri congressional delegation tried to block the ETSI contract. They requested that the Corps of Engineers and the Bureau of Reclamation, which had to approve certain actions before the pipeline could be constructed, withhold granting permits to ETSI. Citing a "significant threat" to downstream states, Missouri's congressmen urged federal officials to begin an extensive and time-consuming environmental assessment that would be thoroughly reviewed before the water sale could be approved.[29]

The federal agencies did not delay the permit process. On 18 August 1982, shortly after the Bureau of Reclamation contracted with ETSI and the Corps of Engineers issued a permit for the building of a water intake structure on Oahe Dam, Missouri joined with Iowa and Nebraska in a suit to block South Dakota's water sale. The states were joined by other plaintiffs, including environmental groups, agricultural organizations, and the Kansas City Southern Railway, all of whom alleged the federal agencies lacked authority to sign the ETSI contract. They contended that the contract, if implemented, would establish a precedent for the sale of water as a cash commodity for export from the basin. Moreover, they argued, the sale would harm downstream states and critical environmental areas and was illegal.[30]

The downstream plaintiffs were heard in U.S. District Court. The judge refused to let South Dakota intervene in the case and wrote an opinion nullifying the permit South Dakota had granted ETSI, concluding that because the main-stem reservoirs had not been constructed as reclamation projects under the Flood Control Act of 1944, the Secretary of the Interior lacked independent power to allocate for industrial use any water stored in them. The U.S. Court of Appeals also ruled in favor of lower basin interests.[31]

In 1987, the U.S. Supreme Court agreed to hear appeals on the issue of the Secretary of the Interior's authority over water stored in the main-stem reservoirs.[32] After hearing the case on 3 November, the Court unanimously affirmed the lower court's ruling. The opinion, released 23 February 1988, stated that it was "beyond question that the Interior Secretary does not possess the authority . . . to execute a contract to provide water from an Army reservoir for industrial uses without obtaining the approval of the Secretary of the Army." The Court held that

although the 1944 Flood Control Act had approved projects that were to be operated by both the Interior and Army departments, Congress had not intended any division of authority that would allow the Interior Secretary to unilaterally remove water from Army reservoirs for irrigation or related purposes. The Court thus confirmed the lower basin plaintiffs' contention that the 1944 act gave the Army Secretary authority to contract for domestic and industrial uses of surplus water in Corps reservoirs, provided those contracts did not adversely affect existing lawful uses of the water.[33]

On the relatively narrow issues it addressed, the Supreme Court's ruling was clear. Under conditions prevailing in 1988, the authority of the Army superseded that of the states in the control of water from the main-stem reservoirs. Any water marketing program intending to use that water would have to meet the conditions in Pick-Sloan. In effect, downstream interests would oversee any proposals for consumptive uses or out-of-basin transfer of the water and would lobby or litigate to prohibit such approvals.

In the aftermath of the ETSI case, controversy shifted from water as a commodity to be marketed to regulation and operation of the main-stem Missouri River projects. Drought placed more stress on the system than it had experienced since reaching normal operating level. It compounded the enmity between upstream and downstream interests, amplified the imbalance between realized and unrealized lower and upper basin Pick-Sloan program benefits, and compelled concerned interests to focus on another relatively unexplored aspect of the 1944 Flood Control Act.

Lake Recreation.

A suit filed in May 1990 by a coalition of the three upper basin states of Montana, North Dakota, and South Dakota pitted traditional purposes of Pick-Sloan against the fisheries and recreation industries.[34] The states sought a restraining order from U.S. District Court to force the Corps of Engineers to maintain water levels sufficient for fish spawning in three main-stem reservoirs. The district court issued an injunction, but the states lost on appeal to the circuit court.

The upper basin coalition wanted the federal courts to consider two management issues not clarified in Pick-Sloan. The plaintiffs contended that federal laws governing main-stem operations establish recreation as a principal objective and that by releasing water to benefit navigation during drought-reduced water conditions, the Corps of Engineers was harming recreation and fisheries. They asked the court to review Corps actions within the purview of the Administrative Procedure Act of 1946 to determine whether the agency's operating decisions were "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law."

By lifting the injunction, the Circuit Court of Appeals deferred to the Corps' decision to release water for navigation. The court recognized that authority was within the Corps' discretionary power to manage the main stem system and noted that the operation policy was implemented with consideration of relevant factors under guidelines in a published master manual.[35] The Court of Appeals did not address the Administrative Procedure Act provision as to whether the Corps' policy in this instance was subject to judicial review.

Before the appeals court determined that issue to be moot, the Assistant Secretary of the Army released a memorandum from the chief counsel of the Corps of Engineers concerning the agency's statutory authorities for recreation and other uses of federal dams and reservoirs administered by the Corps.[36] The chief counsel attached a statement by the Missouri River Division Office of Counsel discussing the role of recreation in the regulation of Missouri River main-stem reservoirs. The chief counsel approved the MRD opinion.

The Corps stated its authority to consider recreation in the management of the main-stem system, but recognized that this regulatory authority is subordinate to its obligation to manage the dams and reservoirs for other purposes. According to the Corps' chief counsel, the system is "designed primarily to accommodate flood control, irrigation, navigation and power with additional purposes such as recreation to be served to the maximum extent possible, without serious interference with the foregoing purposes."

These position papers are not legally binding. They are edifying for those who want to understand the position of the lead agency in interpreting Pick-Sloan issues in the 1990s. Through opinion of Corps legal counsel, the basin public was informed that although some use considerations for main-stem stored water may have changed since Pick-Sloan was adopted, the Corps intended to regulate the system based on its interpretation of traditional Pick-Sloan authorization. The Corps documents note that Pick-Sloan cost allocations have been 25 and 24 percent for flood control and irrigation, and 18 and 33 percent for navigation and power, with no allocation for other uses. Those are the primary purposes for which federal appropriations were made to build Pick-Sloan main-stem projects. Corps counsel concluded that any changes affecting those four purposes require congressional approval.

Changing or clarifying legislation related to Pick-Sloan may be exceedingly difficult unless Congress sees evidence of consensus from basin states and Indian tribes. Even then, Congress must still consider the traditional purposes for which Pick-Sloan was authorized and federal dollars were appropriated. Given that history and the number of cases supporting navigation powers under the commerce clause of the Constitution, the main-stem system will continue to favor downstream interests. Failing to achieve consensus and to secure legislative solutions, upper basin interests have continued to opt for interpretations of Pick-Sloan through the federal courts.

Undaunted by judicial rebuffs, the three upper basin states filed another lawsuit in federal court in February 1991.[37] Alleging that Corps management of the main-stem system was contrary to the intent of the 1944 Flood Control Act and based on an outdated statement of priorities, they asked the court to declare the rights of the states and force the Corps to "develop a plan of operation that reflects contemporary uses and needs." The suit argued that the Corps "will continue to drain the upstream reservoirs to supply water for uneconomic navigation uses." This "archaic" policy, according to the upper basin states, treats fish, wildlife, and recreation as uneconomic "secondary uses." They say that nothing in the 1944 act provides for permanent priorities related to water use and call for a tabula rasa.

Downstream states countered with arguments of major negative impacts if the federal courts were to order the Corps of Engineers to redefine operation priorities. Four lower basin states — Missouri, Iowa, Kansas, and Nebraska — filed friend of the court briefs in U.S. District Court expressing their concern that a reduction of river flow to accommodate upper basin fisheries and recreation industries would jeopardize an array

of critical operations that rely on the discharge of stored water. (The states did not ask to become parties to the lawsuit because a dispute between states goes directly to the U.S. Supreme Court.) The attorneys general of the lower basin states held hearings to gather information from nonfederal governments and other interested parties regarding the Missouri River issues. This would provide a formal record to be used in the lower basin states' role as friend of the court (amici curiae) in the upper basin plaintiffs' suit.[38]

Members of Congress from the basin states expressed their constituents' positions in the conflict. Senator Tom Daschle and Representative Tim Johnson of South Dakota demanded that Corps main-stem management priorities be changed to reflect "contemporary economic realities." Daschle and Johnson contended that South Dakota's "tourist-recreational developments, as well as domestic water and small-scale irrigation projects, dwarf the economic spin-off of the downstream barge industry." They intended to pursue the possibility of taking some administrative duties from the Corps and reordering main-stem system water use priorities.[39]

Senator Charles Grassley of Iowa defended the Corps. He said solution of Missouri River management issues was not to be found in the Congress or the courts. "The Army Corps of Engineers must be allowed to work toward an equitable balance for all concerned interests," he stated. Grassley noted that the Missouri River Main Stem Reservoir System Reservoir Regulation Manual (Master Manual), which the Corps used to manage the main-stem system, was undergoing an extensive review and was "the most fair way to reach a plan for operating the river which is acceptable to everyone involved."[40] (Water control manuals that relate primarily to the functional regulation of an individual project or system of projects are required for all reservoirs under Corps supervision. A "Master Manual" is required in the case of several projects in a drainage basin with interrelated purposes, as in the Missouri River basin.)

The Missouri River Master Manual is based on the Flood Control Act of 1944 and outlines the priorities for water use within the basin and the operating requirements for the main-stem dams and reservoirs. It provides guidance for developing annual operating plans and for making daily operations decisions. The Missouri River Master Manual was prepared initially in 1960 through Corps coordination with other federal agencies and basin states. It was last reviewed and updated in 1978. In the intervening years, numerous issues arose and laws were passed that the Master Manual failed to address.

In 1989, basin state governors requested that the Corps review and update the Master Manual. In November, the Missouri River Division

initiated a two-phased study. Phase 1 was completed in June 1990.[41] The Missouri Basin States Association, which included governor-appointed representatives from all basin states plus one representative from the Indian tribes, monitored the review and provided regular input to the Corps.

Phase 1 of the study was a preliminary assessment of then-current operations and priorities related to water use in the basin. Based on those findings and comments from the public and private sectors at a series of meetings in the basin, the Corps and the governors' oversight group along with a tribal representative focused on the scope of work, data collection development, and analytical tools. The group called for a formal environmental impact statement to include the full range of social, economic, and environmental impacts of alternative scenarios for operating the river.

MBSA created four technical subcommittees to work with the Corps during Phase 2 of the study.[42] These technical work groups focused on hydrology/modeling, low flow/water quality, economics, and environmental considerations. The subcommittees were composed of state employees and at least one tribal representative. Federal agency representatives were included and the Corps contracted with technical experts. This technical team developed models of reservoir system regulation, alternative impacts, regional economics, and specific functional operations scenarios. The subcommittees were scheduled to complete their technical reviews by March 1992.

The Corps of Engineers set May 1992 as the deadline for selecting a "preferred" alternative for updating the Master Manual. The draft environmental impact statement would be available for public comment by January 1993. The Corps would publish the final EIS and updated Master Manual by December 1993.

Senators and representatives from lower Missouri and Mississippi River states intervened by asking the President to direct a Cabinet-level review before the Corps issued a draft environmental impact statement to update the Master Manual.[43] Special interests from the lower basin supported the elected representatives saying the inter-agency review would prevent the Corps "from assigning undue importance in priority to interests such as recreation and to the detriment of power, municipal water supply, and navigation on the Missouri and Mississippi Rivers." This additional review would delay the planned April release of the document.

Nine upper basin members of Congress asked the President to let the process continue as scheduled.[44] They were satisfied with the Corps pledge of "an unbiased analysis" and were concerned that intervention

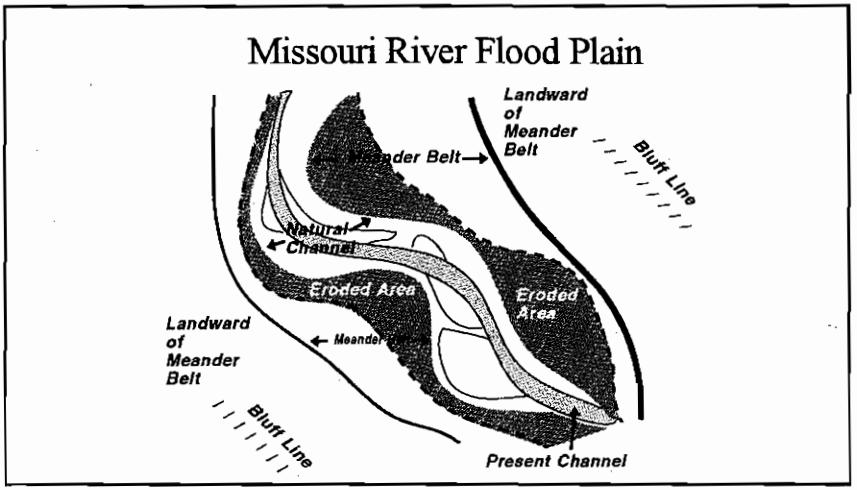
might "jeopardize this process." When the President ordered the Washington-level review, MRD Division Engineer Colonel John E. Schaufelberger said this requirement would "improve the quality of a tool that is critical to a thorough analysis of . . . alternative ways to manage the main stem projects."[45]

Contrasts in the way the Corps produced its 308 Report on the Missouri River basin in 1933 and the 1993 Master Manual are striking. The 308 Report encompassed a study of the entire Missouri watershed for navigation, flood control, hydroelectric power, and irrigation. The agency completed the massive report without technical committees or task groups from the public or private sectors, and without an official review process from those affected. Fifty years later, the Master Manual review required the Corps to consult and coordinate with a wide array of technical, political, and special interests. The federal cost of the effort was estimated in 1991 at more than $8 million; costs would escalate with the mandated Cabinet-level review.

The dollar cost of the Master Manual study manifests the Corps' shift from project development to an expanding regulatory role in extraordinarily complex basinwide water management. For example, changes in Corps main-stem management policy would impact the environments of the reservoirs and river reaches. A growing body of evidence showed how Pick-Sloan developments and operations had changed those environments and what effects Corps regulatory activities were having.

Stream ecologists pointed out the changes brought about by the river's regulation. The big dams control runoff, which reduces flooding, limits the movement of sediment, and alters the movement of fish and wildlife. Before the river was channelized and dammed and its water impounded, the stream bed was wide in many places, with many channels having sandbars and islands. Stream banks were thick with towering trees and marshy vegetation. Away from the river's edge and on the islands, numerous aquatic pools and wetlands existed.

Before it was confined, the river meandered in a wide floodplain with a constantly changing channel alignment through much of its basin reach. (Meandering creates a living productive ecosystem through erosion and deposition.) Within its floodplain were numerous shallow side channels and low-velocity current areas with quiet side pools where a diverse aquatic habitat flourished. These areas provided feeding and breeding places for fish, birds, and fur-bearing animals. Sandbars and islands in seral stages of development were highly productive for many species of plants and wildlife. The variety of plant species associated with the natural floodplain formed a diversified and abundant habitat.



Meander Line.

Plant and animal communities supported by these habitats have been diminished by engineering projects. Channelization of the river from Sioux City to its confluence with the Mississippi River has degraded this entire ecosystem.[46] It confined the river to a narrow floodplain approximately ten percent of its original width, eliminated the side channels and quiet pools, and isolated backwater areas and associated wetlands. Stabilizing the main channel shortened the river in this reach by 127 miles, increased the velocity of water flow, and mitigated its natural erosive action. One study shows that by the year 2003, only 112,000 acres of a preconstruction erosion zone of 664,000 acres will remain.[47]

The river has cut deep into its bed since it has been channelized. Stage trends for the period 1920 to 1990 indicate the water surface at Sioux City has lowered 8 to 10 feet for a regulated flow of 30,000 cubic feet per second. Degradation, or lowering of the stream bed, severs the adjacent shallow pools and wetlands from their main water source and adversely affects riverine areas and riparian habitat. The six Corps main-stem dams and reservoirs also removed natural habitat from the basin's inventory. The impounded water permanently covered 861 miles of river channel with its active erosion zone of approximately 200,000 acres.

Prior to construction of the main-stem dams and stabilization of the downstream channel, the Missouri River carried 150 to 200 million tons of sediment annually. With the Pick-Sloan structures in place, the river averages about 50 million tons. Organic matter eroded from basin soils and meandering stream banks is now captured in reservoirs or contained in channel works. Pick-Sloan projects disturbed the natural cycle of

Riverine Habitat.

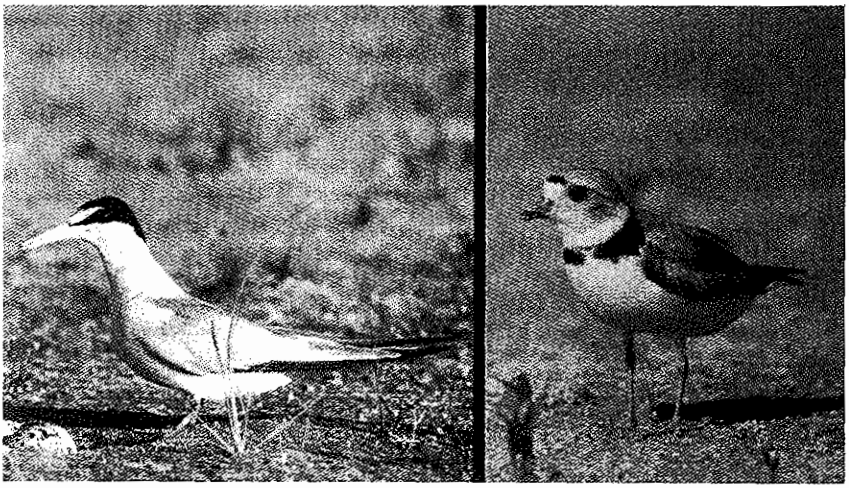
spring and early summer high flows that carried river-borne nutrient-rich organic matter onto the floodplain and contributed to terrestrial and aquatic habitats.

The Corps of Engineers has been unable to do much about the ecosystem damage caused by Pick-Sloan. The value system in place when the Pick-Sloan plan was authorized gave little consideration to destruction of natural habitats and reduction of habitat diversity, creation of migratory barriers, or interception of organic matter by impoundments and channelization. And even in the context of the value system of the 1940s, the trade-offs for perceived benefits to be derived from Pick-Sloan would have caused decisionmakers to set aside ecosystem losses. Hence, the Corps has had scant authority to manage the main-stem system in a way that would safeguard biocentric values.

Finally, in 1973, with growing awareness and concern for species and their protection or promulgation, Congress passed legislation regarding the conservation, protection, and propagation of endangered species. The Endangered Species Act, as it is popularly termed, requires all federal agencies to consider reasonable and prudent measures to protect and conserve species and critical habitats.[48] The act was amended in 1979 to protect endangered plants and authorized the Secretary of the Interior to propose land as critical habitat. Additional legislation in 1980 and 1982 encouraged federal departments and agencies to use their statutory and administrative authority to conserve and promote fish and wildlife conservation, plant species, and critical habitat.

Fortunately, when the endangered species legislation was applied to

the Missouri basin the Corps had a support group in place. The Missouri River Natural Resources Committee, coordinated through the U.S. Fish and Wildlife Service (FWS), is an association of natural resources managers representing the basin states. It responded to provisions in the endangered species legislation stipulating consultation procedures that were to be administered by the FWS. The Corps' major difficulty was in making operations decisions that met both Pick-Sloan requirements and the mandates of the Endangered Species Act.



Least Tern — Piping Plover.

By 1991, three Missouri basin riverine species had been federally listed as endangered or threatened: the least tern, piping plover, and pallid sturgeon. Two other riverine species, the sicklefin chub and sturgeon chub, were candidates for federal listing, and harvest restrictions had been imposed on paddlefish. Some basin states had imposed a ban on commercial harvest of catfish, once a primary commercial target species on the Missouri River. Missouri River biologists estimated the collective density of fish was less than 20 percent of what once lived in the basin.[49]

A "Biological Opinion" issued by the FWS in November 1990 held that the Corps' main-stem operations jeopardized the continued existence of the interior least tern population and the northern Great Plains population of the piping plover. A year later, the FWS charged that the Corps still had not adopted "reasonable and prudent alternatives" for meeting the service's fledge ratio goals. The FWS's field supervisor for North Dakota and South Dakota charged in November 1991 that the Corps' operating plan for 1992 did not adequately safeguard riverine fish and wildlife values.[50]

In formulating its policies and operations for managing the river, the Missouri River Division Reservoir Control Center had been mindful of the basin's natural communities and the hydrologic processes needed to support them. Generally, Missouri River fish and wildlife interests had been satisfied with Corps operations and had cooperated with power, irrigation, and other commercial interests to meet the multi-purpose values associated with main-stem operations. The difficulties inherent in reconciling the various interests were compounded by prolonged drought conditions and the resulting lower reservoir levels.

The drawdown issues illustrated the Corps' difficulty in managing the system and satisfying an expanding number of competing interests. The conflict was no more apparent than that related to the nesting habitat for the least tern and piping plover. Typically, these sparrow-sized birds arrive from the Gulf of Mexico and South America in early summer, nest on the few remaining sandbars in the upper ends of reservoirs and in the few miles of still unchannelized river, and lay their eggs in June. If the nesting succeeds, the birds return south by mid-August.

The Corps is mandated by law to protect these habitat areas. The RCC adjusted operations to accommodate the birds' nesting habits, while fulfilling its requirements to meet downstream navigation target flows. During the drought period, the Corps had been trying to conserve water. But if it allowed the birds to establish their nests on the sandbars at the water's edge in early spring, the amount of water that could be released for navigation in the summer months was limited. The Corps adopted a policy of increasing releases from the lower-most dams by about 7,000 cfs every third day to try to force the nesting birds to the higher elevations on the sandbars.[51]

The FWS was not satisfied with the Corps' release policy. It wanted the agency to maintain a release rate of about 28,000 cfs rather than the fluctuating cycle of 23,000 cfs to 30,000 on the third day. The FWS recognized that the Corps was trying to conserve water; the service's own responsibilities for successful fish spawns at the reservoirs in the spring required comparatively high water levels, as did recreation. Furthermore, sufficient water for summer and winter releases would help aquatic species and habitats downstream of the big dams.

Still, the FWS stated in 1991 that it wanted the Corps to split the navigation season because that policy provided the "opportunity to more closely simulate historic river hydrology."[52] The FWS maintained that by considering natural cycles, the Corps regulators would provide suitable sandbar habitat for terns and plovers, improve fish spawning conditions for such species as the pallid sturgeon and chub, promote enhanced

riverine wetlands and riparian areas, and afford better overall recreation and fisheries and wildlife management.

In light of its competing mandates to comply with both the Endangered Species Act and Pick-Sloan requirements, MRD felt constrained to make any additional adjustments in its operating plans for 1992. With mountain snowpack conditions at about 85 percent of normal in March, RCC technicians were conservative in planning releases to meet targets in the spring. They had to carefully weigh competing demands against a shrinking supply.

Missouri's Attorney General disputed the Corps' solution. He said MRD's RCC was shortening the navigation season despite the fact that storage in upstream reservoirs was in excess of the amount set forth in the Master Manual. The state filed suit in U.S. District Court on 11 May 1992 asking the court to order the Corps to (1) stop deviating from the navigational volume set out in its Master Manual, (2) maintain reservoirs at the levels specified, and (3) prepare an environmental impact statement on its actions in response to the drought.[53] The Missouri River Basin Association director had voted for the operating plan. Although the court denied the state's request for an injunction, it agreed to consider in the fall of 1993 such issues as whether the Corps was violating the Flood Control Act of 1944, the National Environmental Protection Act, the Administrative Procedure Act, and the rules promulgated by the agency in its Master Manual.

The conflicts between traditional uses of Missouri River water under Pick-Sloan and the demands and mandates of more contemporary interests were all too apparent when the drought continued. Simplifying operations to safeguard the least tern's sandbar habitat would harm the navigation industry and further damage habitat and wetland areas downstream. Retaining water in upstream reservoirs and lowering the river's surface elevations in reaches below any of the dams would deprive municipalities and public-services facilities of water supplies. Cutting back on water releases to assist recreation and improve fish spawning in the reservoirs would cause the Western Area Power Administration to lose power generation.

The Corps of Engineers had in place in 1992 an integrative process clarifying many of the main-stem management issues. Hanging over this process like the sword of Damocles was the matter of Indian reserved water rights, another important issue not considered by the drafters of Pick-Sloan legislation and not being addressed during the extensive Master Manual review process. Although tribal water rights will not affect Corps operations until the amount of water they are entitled to is

defined, Indian reserved water rights ultimately could disrupt carefully formulated alternative-operation-scenario modeling and substantially affect non-Indian water use. Those familiar with Missouri basin water issues agree that tribal claims will be a factor in future river management.

In 1992, the issues in determining Indian claims related to both quantity and priority of right. Even with the active participation of the basin states, the federal government took little account of Indian water rights when it passed the Pick-Sloan legislation. In 1908, the U.S. Supreme Court held that when the federal government withdrew lands from the public domain to establish Indian reservations, it also implied withdrawal from the then-unappropriated waters of streams sufficient to satisfy the purposes of the reservation.[54] The Indian water rights had been reserved along with the land and were not subject to state law. The decision, known as the Winters Doctrine, has withstood the test of time in establishing that the implied water rights are sufficient to satisfy purposes of the reservation.

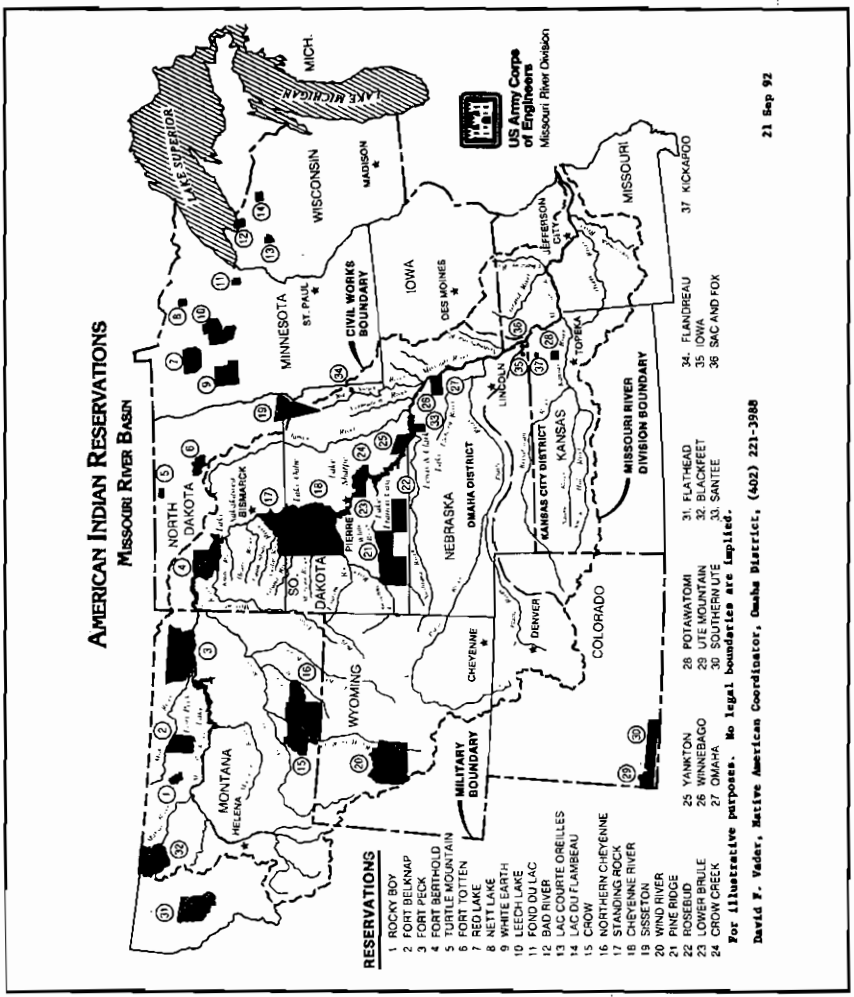
In 1992 the extent of Indian water rights was a major issue in the Missouri basin. The Indians there are united in claiming that Winters ensures them of enough water to render Indian reservations viable and permanent homelands. They assert that this includes sufficient water to sustain aquatic life and recreation, municipal and industrial uses, and irrigation and other agricultural pursuits.

Missouri basin tribes expect the federal government to help them attain economic independence by developing a policy statement that supports their receiving an allocation of low-cost hydropower generated at the main-stem dams. Indians also want the right to market water on and off the reservation. They feel that water revenues would enable them to develop an economy on a par with their more affluent neighbors who are already beneficiaries of federally subsidized water projects.

Difficult processes are required in establishing water rights for each of the 26 Indian tribes in the Missouri basin. The three basic approaches would be to form a compact, litigate, or negotiate. In reality, negotiations almost universally include litigating or forming a compact. In 1993 tribal representatives asked the Secretary of the Interior to (1) provide independent tribal legal counsel on water rights for both litigation and negotiation of water rights claims; (2) create independent legal counsel for the Bureau of Indian Affairs to eliminate potential conflicts of interest between and within the Departments of Justice and Interior; (3) support amending the McCarran Amendment to prohibit adjudication of Indian water rights in state court proceedings; (4) initiate a process to lift the Interior Department's moratorium on approval of tribal water codes; and

(5) support working groups in achieving water settlements.[55]

Montana created the Montana Reserved Water Rights Compact Commission in 1979 to settle tribal claims. In 1985, the Assiniboine and Sioux Indian tribes of the Fort Peck Reservation in northeastern Montana and the state of Montana entered into a water compact. It allows any amount of the tribal water rights, quantified at 1,050,000 acre-feet a year of water from the Missouri River and tributaries, to be diverted for marketing on the Fort Peck Reservation. The compact allows the tribes to divert 50,000 acre-feet of water off the reservation under certain conditions; other diversions may be allowed if Montana and the Department of Interior approve. It includes a number of other provisions concerning water policy and management.[56]



The Fort Peck-Montana compact was approved by the U.S. Attorney General and the Secretary of the Interior. After the compact had been ten years in process, the Senate Select Committee on Indian Affairs asked the U.S. Senate to ratify the agreement.[57] Even if approved, litigation could delay implementation.

Litigation has not proved to be expeditious in resolving the complex issues associated with Indian reserved water rights. After the Shoshone and Arapahoe of the Wind River Reservation in Wyoming brought suit in 1977, the courts awarded the tribes 500,000 acre-feet of water a year. Fourteen years later, the states and tribes were arguing over specific rights to use. Each side had spent more than $9 million without resolving many of the underlying problems. Implementing plans to provide the highest and best uses of scarce water resources also has been difficult. The Wind River water rights litigation subjected both the Indian and non-Indian communities and their economies to enormous uncertainties and risks.[58]

Negotiated settlements are less disruptive and less costly as relates to existing non-Indian uses of water, while more quickly enabling Indian reservations to become viable, economically self-sufficient communities. Settlements may be safeguarded and implemented in a more facilitative manner than with litigation or through compacts because negotiators have established cooperative partnerships rather than adversarial relationships. Negotiated settlements offer greater flexibility, provide opportunities for public financing, and appeal to private-sector interests who want to turn "paper rights" into development dollars. The negotiating process brings together those who have an expressed interest in the agreement and fosters partnerships in pursuing dual objectives.

In 1989, the Senate Committee on Indian Affairs appealed to President George Bush for more coordinated policymaking on behalf of American Indians.[59] In the Missouri basin some efforts were made in 1990 to affirm that commitment. An Indian representative sat as a full member of the Missouri Basin States Association and in 1992 was elected its secretary. The Corps' technical committees reviewing the Missouri River Master Manual had tribal representation.

In 1993 the Mni Sose Coalition was established to address all aspects of Indian water rights issues in the Missouri River basin. The coalition formed as a nonprofit corporation with 19 tribes as members to assist them in protecting, developing, and managing their reserved rights to Missouri basin water. The coalition will act as an advocate for Indians on specific water issues.[60]

Because they do not want to risk losing basic treaty rights, Missouri

basin tribes have been conservative in protecting their water rights. Once the tribes quantify their claims for Missouri basin water, federal and nonfederal interests will know how much water they have for the future. Pending this quantification, planners in the early 1990s were still using the rough estimates of about 8 million acre-feet per year, or one-third of the river's normal annual flow at Sioux City. Treating the basin tribes as sovereign partners with the states and the federal government will help ensure management of water resources in accord with policies and goals based on realistic assessments of water quantities and on contemporary social, economic, and political values.

Recognizing jurisdictional rights and dependencies is important. Despite the forward strides made, legal and institutional arrangements have not kept pace with changing values and new directions for use of Missouri River main-stem water. Enlightened policy and management must integrate solutions that address the concerns of all involved parties. The various users and holders of water rights need to unite, as Pick-Sloan advocates did in the 1940s, as full partners in regional water management.

Reconciling the needs of competing interests is just one aspect of the increasingly complex management of the main-stem system in the 1990s under the Pick-Sloan authority and its interpretation. The Corps has forged an effective coalition to review conflicts related to operating criteria and the Master Manual, and to consider what policy changes could be implemented within the constraints of existing legislation. With a well-informed membership and clearly defined terms of reference, the Missouri River Natural Resources Committee provided influential and valuable guidance based primarily on fish and wildlife concerns.

The Missouri Basin States Association had changed its name to the Missouri River Basin Association, reflecting the association's expanded representation. In January 1993, the association had nine voting directors (eight representing the states and one tribal), and eight representatives of federal agencies serving on the board in an advisory capacity. While continuing to produce annual operating plan recommendations and providing technical assistance to the Master Manual review, MRBA broadened its activities. The association asked the new Secretary of the Interior to support MRBA management activities and it testified before Congress on behalf of water resources projects the directors agreed to support.[61]

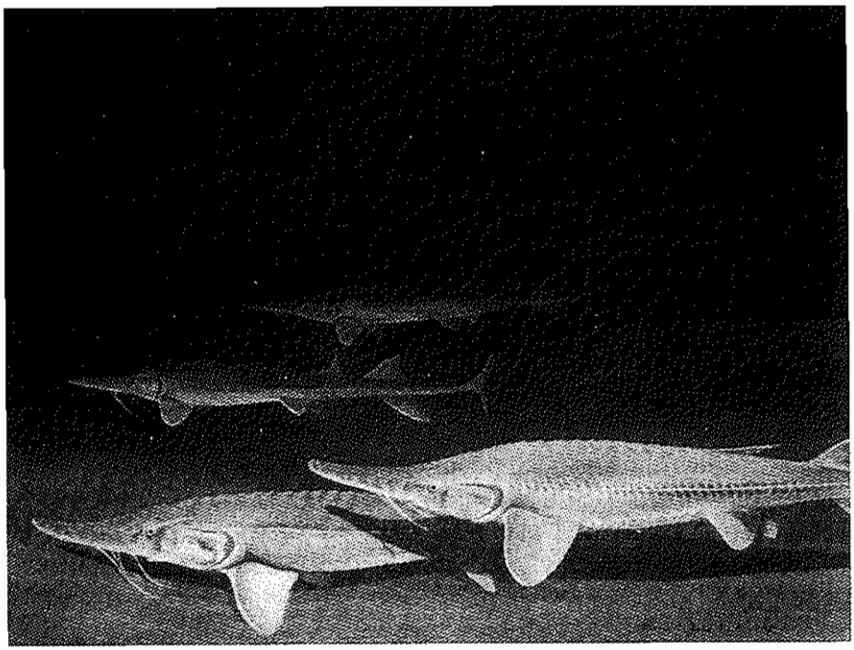
Alternative management scenarios were an option. However, under the 1944 Flood Control Act and in accordance with the navigational servitude decisions of the U.S. Supreme Court, the Corps had a duty to maintain sufficient flows for navigation purposes. The issues involved

could not be determined on the basis of equities or economic factors related to the states. The "new frontier in irrigation history" did not materialize, and recreation interests were at risk of being harmed by water releases from the main-stem system for downstream purposes. Unfortunately, the Corps of Engineers had limited authority to make operating decisions based on adverse impacts.

Federal officials are authorized and obligated to act by the Constitution and the Congress. No legal authority was in place in 1993 to enable significant changes in system operation. Any Missouri River main-stem management policy impeding interstate commerce, and thereby negatively affecting public health and safety, would be struck down by the federal courts.

The navigation powers in the commerce clause serve to clarify much of the ambiguity in Pick-Sloan legislation. The nation was created to be independent from state restraint in matters within the federal government's sphere of delegated powers. Because state water policy was enacted into law mostly to serve individual needs, state laws are inadequate to meet federal needs in multi-purpose interstate water project management. Federal water policy is based on a broader perspective.

The challenge for the people of the Missouri River basin in the 1990s was to design institutions and procedures that would satisfy both interstate requirements and state and local needs; to work toward main-stem system management that would more adequately meet competing demands arising from changing public values; and to seek a way to operate the system so that each use or need would be met in proportion to its public values, so long as the adopted policy met the test of navigation servitude.



Sturgeon by Sallie Zydek.